

WHAT IS CLAIMED IS:

1. A method of making a heterogeneous building block array, the method comprising:

5 forming a plurality of spots on a solid support, the spots comprising a plurality of building blocks;

coupling a plurality of building blocks to the solid support in the spots.

10 2. The method of claim 1, further comprising mixing a plurality of activated building blocks and employing the mixture in forming the plurality of spots.

15 3. The method of claim 1, comprising applying individual activated building blocks on the support.

4. The method of claim 1, wherein forming comprises piezoelectric spotting, pin spotting, or electromagnetic spotting.

5. The method of claim 1, wherein the solid support comprises a glass plate or microscope slide.

20 6. A method of making a receptor surface, the method comprising:  
forming a region on a solid support, the region comprising a plurality of building blocks;  
coupling the plurality of building blocks to the solid support in the region.

25 7. The method of claim 6, further comprising mixing a plurality of activated building blocks and employing the mixture in forming the receptor surface.

30 8. The method of claim 6, comprising applying individual activated building blocks to the support.

9. The method of claim 6, wherein the solid support comprises a tube, plate, or well.

10. A method of making an artificial receptor, the method comprising:  
5 forming a region on a support, the region comprising a plurality of building blocks; coupling the plurality of building blocks to the support in the region.

11. The method of claim 10, wherein the region is a spot.

10 12. The method of claim 10, wherein the support comprises a scaffold and the region comprises a plurality of functional groups on the scaffold.

13. A method of using an artificial receptor comprising:  
contacting a first heterogeneous molecular array with a test ligand;  
15 the array comprising:  
a support; and  
a plurality of spots of building blocks attached to the support;  
the spots of building blocks comprising a plurality of building blocks; and  
blocks; and  
20 the building blocks being coupled to the support;  
detecting binding of a test ligand to one or more spots; and  
selecting one or more of the binding spots as the artificial receptor;  
wherein the building blocks in the array define a first set of building blocks, and the plurality of building blocks in the one or more binding spots defines one or more selected  
25 binding combination of building blocks.

14. The method of claim 13, wherein the artificial receptor comprises a lead artificial receptor.

30 15. The method of claim 13, further comprising:  
determining the combinations of building blocks in the one or more binding spots;

developing, based on the combinations determined, one or more developed combinations of building blocks distinct from those in the one or more selected combinations of building blocks;

contacting a second heterogeneous molecular array with the test ligand,

5 the second heterogeneous molecular array comprising a plurality of spots,  
the spots comprising a developed combination of building blocks;

detecting binding of a test ligand to one or more spots of the second heterogeneous molecular array; and

selecting one or more of the spots of the second heterogeneous molecular array as the  
10 artificial receptor;

wherein the building blocks in the second heterogeneous molecular array define a second set of building blocks.

16. The method of claim 15, wherein the artificial receptor comprises a lead  
al receptor.

17. The method of claim 16, further comprising varying the structure of the lead artificial receptor to increase binding speed or binding affinity of the test ligand.

20 18. The method of claim 14, further comprising varying the structure of the lead  
artificial receptor to increase binding speed or binding affinity of the test ligand.

19. The method of claim 13, wherein the first set of building blocks comprises a subset of a larger set of building blocks.

25        20. The method of claim 15, wherein the first set of building blocks comprises a subset of a larger set of building blocks, the second subset of building blocks defines a subset of the larger set of building blocks, and the first subset is not equivalent to the second subset.

30 21. The method of claim 13, wherein the spots comprise 2, 3, or 4 building blocks.

22. The method of claim 15, wherein the spots of the second heterogeneous molecular array comprise 3, 4, or 5 building blocks, and the spots of the second heterogeneous molecular array comprise more building blocks than the binding spots.

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23. The method of claim 13, further comprising:  
identifying the plurality of building blocks making up the artificial receptor;  
coupling the identified plurality of building blocks to a scaffold molecule;  
evaluating the scaffold artificial receptor for binding of the test ligand.

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24. The method of claim 23, wherein:  
coupling comprises making a plurality of positional isomers of the building blocks on the scaffold;  
evaluating comprises comparing the plurality of the scaffold positional isomer  
15 artificial receptors; and  
selecting one or more of the scaffold positional isomer artificial receptors as lead or working artificial receptor.

25. The method of claim 15, further comprising:  
20 identifying the plurality of building blocks making up the artificial receptor;  
coupling the identified plurality of building blocks to a scaffold molecule;  
evaluating the scaffold artificial receptor for binding of the test ligand.

26. The method of claim 25, wherein:  
25 coupling comprises making a plurality of positional isomers of the building blocks on the scaffold;  
evaluating comprises comparing the plurality of the scaffold positional isomer artificial receptors; and  
selecting one or more of the scaffold positional isomer artificial receptors as lead or  
30 working artificial receptor.

27. The method of claim 13, further comprising applying the test ligand to one or more spots that function as controls for validating or evaluating binding to an artificial receptor.

5 28. The method of claim 27, wherein the control spot comprises no building block, only a single building block, only functionalized lawn, or a combination thereof.

10 29. A composition comprising:  
a support; and  
a portion of the support comprising a plurality of building blocks;  
the building blocks being coupled to the support.

30. The composition of claim 29, comprising a candidate artificial receptor, a lead artificial receptor, a working artificial receptor, or a combination thereof.

15 31. The composition of claim 30, wherein the support comprises a scaffold molecule.

20 32. The composition of claim 30, wherein the artificial receptor comprises 2, 3, 4, 5, or 6 different building blocks.

25 33. The composition of claim 29, comprising a plurality of spots on the support; the spots comprising a plurality of building blocks; and  
the building blocks being coupled to the support.

34. The composition of claim 33, wherein the spots are configured in an array.

35. The composition of claim 34, wherein the array comprises more than 1 million spots.

36. The composition of claim 33, wherein the spots comprise 2, 3, 4, 5, or 6 building blocks.

5  
37. The composition of claim 33, wherein the support comprises a solid support.

38. The composition of claim 37, comprising a plurality of spots on a surface of the solid support.

10  
39. The composition of claim 33, comprising a functionalized lawn coupled to the support and the building blocks coupled in spots to the lawn.

40. The composition of claim 39, comprising a functionalized glass support.

15  
41. The composition of claim 33, wherein the support comprises a scaffold molecule.

42. The composition of claim 29, wherein:  
the support comprises a surface;  
the surface comprises a region; and  
20 the region comprises a plurality of building blocks;  
the building blocks being coupled to the support.

43. The composition of claim 42, wherein the region comprises 2, 3, 4, 5, or 6 building blocks.

25  
44. The composition of claim 42, wherein the support comprises a tube or well.

45. The composition of claim 42, further comprising a functionalized lawn coupled to the tube or well and the building blocks coupled to the lawn.

46. The composition of claim 29, the plurality of building blocks independently comprising framework, linker, first recognition element, and second recognition element.

47. The composition of claim 46, wherein the framework comprises an amino  
5 acid.

48. The composition of claim 47, wherein the amino acid comprises serine, threonine, or tyrosine.

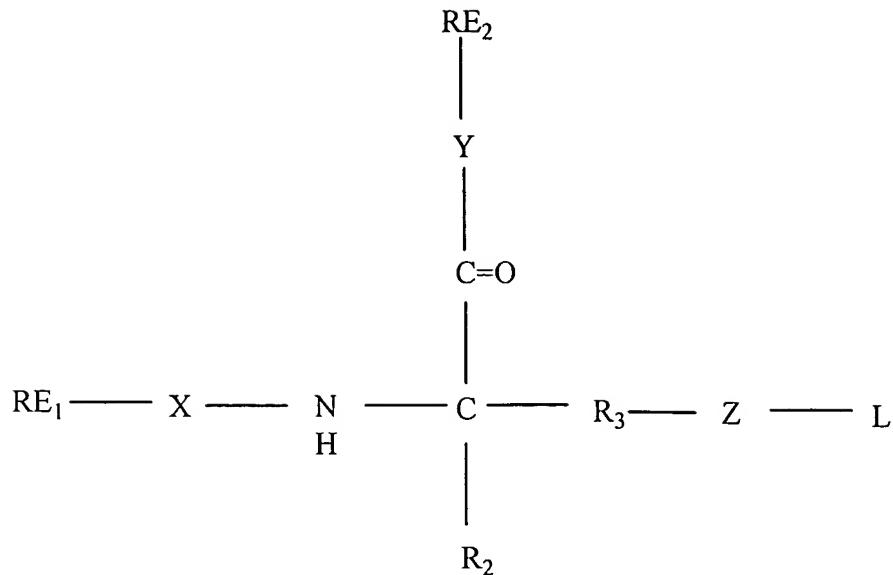
10 49. The composition of claim 47, wherein the amino acid comprises tyrosine.

50. The composition of claim 46, wherein the linker has the formula  $(CH_2)_nC(O)-$ , with n=1-16.

15 51. The composition of claim 46, wherein the first recognition element and second recognition element independently are of formulas B1, B2, B3, B4, B5, B6, B7, B8, B9, A1, A2, A3, A4, A5, A6, A7, A8, or A9.

20 52. The composition of claim 47, wherein the support comprises a support matrix and the support matrix comprises a lawn of amines.

53. The composition of claim 29, the plurality of building blocks independently having the formula:



in which: X is absent or C=O; Y is absent, NH, or O; Z is O; R<sub>2</sub> is H or CH<sub>3</sub>; R<sub>3</sub> is CH<sub>2</sub> or CH<sub>2</sub>-phenyl; RE<sub>1</sub> is B1, B2, B3, B4, B5, B6, B7, B8, B9, A1, A2, A3, A4, A5, A6, A7, A8, or A9; RE<sub>2</sub> is A1, A2, A3, A4, A5, A6, A7, A8, A9, B1, B2, B3, B4, B5, B6, B7, B8, or B9; 5 and L is (CH<sub>2</sub>)<sub>n</sub>COOH, with n=1-16.

54. The composition of claim 53 the building blocks being independently:

4-{4-[(acetylamino-ethylcarbamoyl-methyl)-amino]-phenoxy}-butyric acid;

4-(4-{[(3-cyclopentyl-propionylamino)-ethylcarbamoyl-methyl]-amino}-phenoxy)-butyric acid;

10 4-[4-{[(2-(3-chloro-phenyl)-acetylamino)-ethylcarbamoyl-methyl]-amino}-phenoxy]-butyric acid;

4-(4-{[ethylcarbamoyl-(3-phenyl-acryloylamino)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{[ethylcarbamoyl-(3-pyridin-3-yl-propionylamino)-methyl]-amino}-phenoxy)-butyric acid;

15 4-(4-{[ethylcarbamoyl-(2-methylsulfanyl-acetylamino)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{[ethylcarbamoyl-(3-hydroxy-butyrylamino)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{[(3-carbamoyl-propionylamino)-ethylcarbamoyl-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{[(4-dimethylamino-butyrylamino)-ethylcarbamoyl-methyl]-amino}-phenoxy)-butyric acid;

20 4-{4-[(acetylamino-isobutylcarbamoyl-methyl)-amino]-phenoxy}-butyric acid;

4-(4-{{(3-cyclopentyl-propionylamino)-isobutylcarbamoyl-methyl]-amino}-phenoxy)-butyric acid;

4-[4-{{[2-(3-chloro-phenyl)-acetylamino]-isobutylcarbamoyl-methyl]-amino}-phenoxy]-butyric acid;

5 4-(4-{{isobutylcarbamoyl-(3-phenyl-acryloylamino)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{isobutylcarbamoyl-(3-pyridin-3-yl-propionylamino)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{isobutylcarbamoyl-(2-methylsulfanyl-acetylamino)-methyl]-amino}-phenoxy)-butyric acid;

10 4-(4-{{(3-hydroxy-butyrylamino)-isobutylcarbamoyl-methyl]-amino}-phenoxy)-butyric acid;

4-(3-{{(3-carbamoyl-propionylamino)-isobutylcarbamoyl-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(4-dimethylamino-butyrylamino)-isobutylcarbamoyl-methyl]-amino}-phenoxy)-butyric acid;

15 4-{{4-[(acetylamino-phenethylcarbamoyl-methyl)-amino]-phenoxy}-butyric acid;

4-(4-{{(3-cyclopentyl-propionylamino)-phenethylcarbamoyl-methyl]-amino}-phenoxy)-butyric acid;

4-[4-{{[2-(3-chloro-phenyl)-acetylamino]-phenethylcarbamoyl-methyl]-amino}-phenoxy]-butyric acid;

20 4-(4-{{phenethylcarbamoyl-(3-phenyl-acryloylamino)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{phenethylcarbamoyl-(3-pyridin-3-yl-propionylamino)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(2-methylsulfanyl-acetylamino)-phenethylcarbamoyl-methyl]-amino}-phenoxy)-butyric acid;

25 4-(4-{{(3-hydroxy-butyrylamino)-phenethylcarbamoyl-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(3-carbamoyl-propionylamino)-phenethylcarbamoyl-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(4-dimethylamino-butyrylamino)-phenethylcarbamoyl-methyl]-amino}-phenoxy)-butyric acid;

30 4-[4-{{(acetylamino-[2-(4-methoxy-phenyl)-ethylcarbamoyl]-methyl]-amino}-phenoxy]-butyric acid;

4-[4-({(3-cyclopentyl-propionylamino)-[2-(4-methoxy-phenyl)-ethylcarbamoyl]-methyl}-amino)-phenoxy]-butyric acid;

4-[4-({[2-(3-chloro-phenyl)-acetylamino]-[2-(4-methoxy-phenyl)-ethylcarbamoyl]-methyl}-amino)-phenoxy]-butyric acid;

5 4-(4-{{[2-(4-methoxy-phenyl)-ethylcarbamoyl]-[3-phenyl-acryloylamino]-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{[2-(4-methoxy-phenyl)-ethylcarbamoyl]-[3-pyridin-3-yl-propionylamino]-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{[2-(4-methoxy-phenyl)-ethylcarbamoyl]-[2-methylsulfanyl-acetylamino]-methyl]-amino}-phenoxy)-butyric acid;

10 4-[4-({(3-hydroxy-butyrylamino)-[2-(4-methoxy-phenyl)-ethylcarbamoyl]-methyl}-amino)-phenoxy]-butyric acid;

4-[4-({(3-carbamoyl-propionylamino)-[2-(4-methoxy-phenyl)-ethylcarbamoyl]-methyl}-amino)-phenoxy]-butyric acid;

15 4-[4-({(4-dimethylamino-butyrylamino)-[2-(4-methoxy-phenyl)-ethylcarbamoyl]-methyl}-amino)-phenoxy]-butyric acid;

4-(4-{{[acetylamino-(2-pyridin-2-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{[3-cyclopentyl-propionylamino)-(2-pyridin-2-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

20 4-(4-{{[2-(3-chloro-phenyl)-acetylamino]-[2-pyridin-2-yl-ethylcarbamoyl]-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(3-phenyl-acryloylamino)-(2-pyridin-2-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{[2-pyridin-2-yl-ethylcarbamoyl)-(3-pyridin-3-yl-propionylamino)-methyl]-amino}-phenoxy)-butyric acid;

25 4-(4-{{(2-pyridin-2-yl-ethylcarbamoyl)-(2-pyridin-2-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(2-methylsulfanyl-acetylamino)-(2-pyridin-2-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(3-hydroxy-butyrylamino)-(2-pyridin-2-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

30 4-(4-{{(3-carbamoyl-propionylamino)-(2-pyridin-2-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(4-dimethylamino-butyryl)amino)-(2-pyridin-2-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(acetyl)amino-(2-methoxy-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(3-cyclopentyl-propionyl)amino)-(2-methoxy-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

5 4-(4-{{[2-(3-chloro-phenyl)-acetyl]amino)-(2-methoxy-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(2-methoxy-ethylcarbamoyl)-(3-phenyl-acryloyl)amino)-methyl]-amino}-phenoxy)-butyric acid;

10 4-(4-{{(2-methoxy-ethylcarbamoyl)-(3-pyridin-3-yl-propionyl)amino)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(2-methoxy-ethylcarbamoyl)-(2-methylsulfanyl-acetyl)amino)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(3-hydroxy-butyryl)amino)-(2-methoxy-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

15 4-(3-{{(3-carbamoyl-propionyl)amino)-(2-methoxy-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(4-dimethylamino-butyryl)amino)-(2-methoxy-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

20 4-(4-{{(acetyl)amino-(2-hydroxy-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(3-cyclopentyl-propionyl)amino)-(2-hydroxy-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{[2-(3-chloro-phenyl)-acetyl]amino)-(2-hydroxy-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

25 4-(4-{{(2-hydroxy-ethylcarbamoyl)-(3-phenyl-acryloyl)amino)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(2-hydroxy-ethylcarbamoyl)-(3-pyridin-3-yl-propionyl)amino)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(2-hydroxy-ethylcarbamoyl)-(2-methylsulfanyl-acetyl)amino)-methyl]-amino}-phenoxy)-butyric acid;

30 4-(4-{{(2-hydroxy-ethylcarbamoyl)-(2-methylsulfanyl-acetyl)amino)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(3-hydroxy-butyrylamino)-(2-hydroxy-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(3-{{(3-carbamoyl-propionylamino)-(2-hydroxy-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

5 4-(4-{{(4-dimethylamino-butyrylamino)-(2-hydroxy-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{[acetylamino-(2-acetylamino-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{[(2-acetylamino-ethylcarbamoyl)-(3-cyclopentyl-propionylamino)-methyl]-amino}-phenoxy)-butyric acid;

10 4-[4-{{(2-acetylamino-ethylcarbamoyl)-[2-(3-chloro-phenyl)-acetylamino]-methyl]-amino}-phenoxy]-butyric acid;

4-(4-{{[(2-acetylamino-ethylcarbamoyl)-(3-phenyl-acryloylamino)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{[(2-acetylamino-ethylcarbamoyl)-(3-pyridin-3-yl-propionylamino)-methyl]-amino}-phenoxy)-butyric acid;

15 4-(4-{{[(2-acetylamino-ethylcarbamoyl)-(2-methylsulfanyl-acetylamino)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{[(2-acetylamino-ethylcarbamoyl)-(3-hydroxy-butyrylamino)-methyl]-amino}-phenoxy)-butyric acid;

20 4-(3-{{(2-acetylamino-ethylcarbamoyl)-(3-carbamoyl-propionylamino)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{[(2-acetylamino-ethylcarbamoyl)-(4-dimethylamino-butyrylamino)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{[acetylamino-(2-pyrrolidin-1-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

25 4-(4-{{[(3-cyclopentyl-propionylamino)-(2-pyrrolidin-1-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{[(2-(3-chloro-phenyl)-acetylamino)-(2-pyrrolidin-1-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

30 4-(4-{{[(3-phenyl-acryloylamino)-(2-pyrrolidin-1-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(3-pyridin-3-yl-propionylamino)-(2-pyrrolidin-1-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(2-methylsulfanyl-acetylamino)-(2-pyrrolidin-1-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

5 4-(4-{{(3-hydroxy-butyrylamino)-(2-pyrrolidin-1-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(3-{{(3-carbamoyl-propionylamino)-(2-pyrrolidin-1-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(4-dimethylamino-butyrylamino)-(2-pyrrolidin-1-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

10 salt thereof, ester thereof, or protected derivative thereof.

55. The composition of claim 29, wherein the support comprises a scaffold molecule.

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56. The composition of claim 29, wherein the artificial receptor comprises 2, 3, 4, 5, or 6 different building blocks.

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57. The composition of claim 29, wherein the support comprises a solid support.

58. The composition of claim 29, comprising a functionalized lawn coupled to the support and the building blocks coupled in spots to the lawn.

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59. The composition of claim 58, comprising a functionalized glass support.

60. An artificial receptor, the artificial receptor comprising a plurality of building blocks coupled to a support.

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61. A heterogeneous building block array comprising:

a support; and

a plurality of spots on the support;

the spots comprising a plurality of building blocks; and  
the building blocks being coupled to the support.

62. A composition comprising:

5 a surface; and

a region on the surface comprising a plurality of building blocks;

the building blocks being coupled to the support.

63. A composition of matter comprising a plurality of building blocks; the  
10 building blocks having the formula:

linker-framework-(first recognition element)(second recognition element).

64. The composition of matter of claim 63, wherein the framework comprises an  
amino acid.

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65. The composition of matter of claim 64, wherein the amino acid comprises  
serine, threonine, or tyrosine.

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66. The composition of matter of claim 64, wherein the amino acid comprises  
tyrosine.

67. The composition of matter of claim 63, wherein the linker has the formula  
 $(CH_2)_nCO-$ , with  $n=1-16$ .

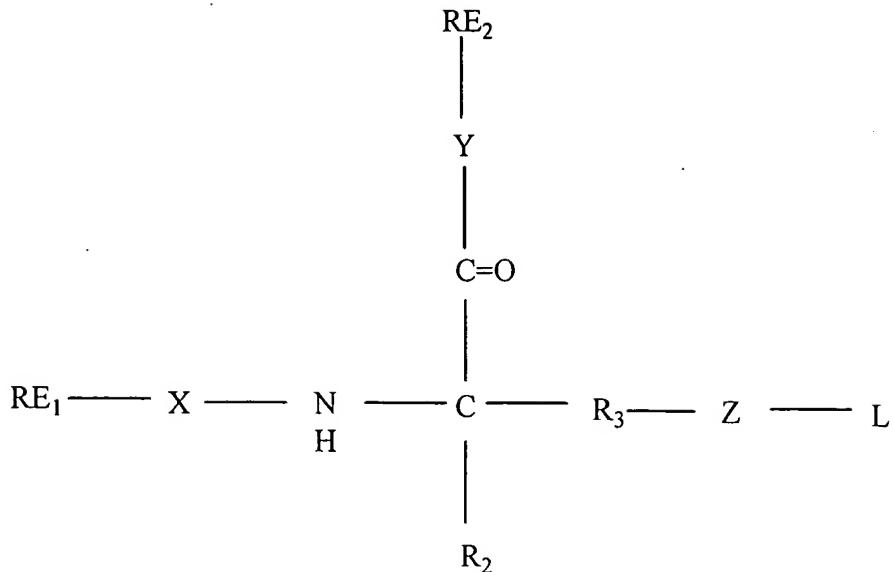
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68. The composition of matter of claim 63, wherein the first recognition element  
and second recognition element independently are of formulas B1, B2, B3, B4, B5, B6, B7,  
B8, B9, A1, A2, A3, A4, A5, A6, A7, A8, or A9.

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69. The composition of matter of claim 63, the plurality of building blocks

independently having the formula:



in which: X is absent or C=O; Y is absent, NH, or O; Z is O; R<sub>2</sub> is H or CH<sub>3</sub>; R<sub>3</sub> is CH<sub>2</sub> or CH<sub>2</sub>-phenyl; RE<sub>1</sub> is B1, B2, B3, B4, B5, B6, B7, B8, B9, A1, A2, A3, A4, A5, A6, A7, A8, or A9; RE<sub>2</sub> is A1, A2, A3, A4, A5, A6, A7, A8, A9, B1, B2, B3, B4, B5, B6, B7, B8, or B9; 5 and L is (CH<sub>2</sub>)<sub>n</sub>COOH, with n=1-16.

70. The composition of matter of claim 63, the building blocks being independently:

10 4-{4-[(acetylamino-ethylcarbamoyl-methyl)-amino]-phenoxy}-butyric acid;  
4-(4-{{[(3-cyclopentyl-propionylamino)-ethylcarbamoyl-methyl]-amino}-phenoxy)-butyric acid;  
4-[4-({{[2-(3-chloro-phenyl)-acetylamino]-ethylcarbamoyl-methyl}-amino)-phenoxy]-butyric acid;  
4-(4-{{[ethylcarbamoyl-(3-phenyl-acryloylamino)-methyl]-amino}-phenoxy)-butyric acid;  
4-(4-{{[ethylcarbamoyl-(3-pyridin-3-yl-propionylamino)-methyl]-amino}-phenoxy)-butyric  
15 acid;  
4-(4-{{[ethylcarbamoyl-(2-methylsulfanyl-acetylamino)-methyl]-amino}-phenoxy)-butyric acid;  
4-(4-{{[ethylcarbamoyl-(3-hydroxy-butyrylamino)-methyl]-amino}-phenoxy)-butyric acid;  
4-(4-{{[(3-carbamoyl-propionylamino)-ethylcarbamoyl-methyl]-amino}-phenoxy)-butyric acid;  
4-(4-{{[(4-dimethylamino-butyrylamino)-ethylcarbamoyl-methyl]-amino}-phenoxy)-butyric  
20 acid;  
4-{4-[(acetylamino-isobutylcarbamoyl-methyl)-amino]-phenoxy}-butyric acid;

4-(4-{{(3-cyclopentyl-propionylamino)-isobutylcarbamoyl-methyl]-amino}-phenoxy)-butyric acid;

4-[4-{{[2-(3-chloro-phenyl)-acetylamino]-isobutylcarbamoyl-methyl]-amino}-phenoxy]-butyric acid;

5 4-(4-{{isobutylcarbamoyl-(3-phenyl-acryloylamino)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{isobutylcarbamoyl-(3-pyridin-3-yl-propionylamino)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{isobutylcarbamoyl-(2-methylsulfanyl-acetylamino)-methyl]-amino}-phenoxy)-butyric acid;

10 4-(4-{{(3-hydroxy-butyrylamino)-isobutylcarbamoyl-methyl]-amino}-phenoxy)-butyric acid;

4-(3-{{(3-carbamoyl-propionylamino)-isobutylcarbamoyl-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(4-dimethylamino-butyrylamino)-isobutylcarbamoyl-methyl]-amino}-phenoxy)-butyric acid;

15 4-{{4-[(acetylamino-phenethylcarbamoyl-methyl)-amino]-phenoxy}-butyric acid;

4-(4-{{(3-cyclopentyl-propionylamino)-phenethylcarbamoyl-methyl]-amino}-phenoxy)-butyric acid;

4-[4-{{[2-(3-chloro-phenyl)-acetylamino]-phenethylcarbamoyl-methyl]-amino}-phenoxy]-butyric acid;

20 4-(4-{{[phenethylcarbamoyl-(3-phenyl-acryloylamino)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{[phenethylcarbamoyl-(3-pyridin-3-yl-propionylamino)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(2-methylsulfanyl-acetylamino)-phenethylcarbamoyl-methyl]-amino}-phenoxy)-butyric acid;

25 4-(4-{{(3-hydroxy-butyrylamino)-phenethylcarbamoyl-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(3-carbamoyl-propionylamino)-phenethylcarbamoyl-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(4-dimethylamino-butyrylamino)-phenethylcarbamoyl-methyl]-amino}-phenoxy)-butyric acid;

30 4-[4-{{acetylamino-[2-(4-methoxy-phenyl)-ethylcarbamoyl]-methyl]-amino}-phenoxy]-butyric acid;

4-[4-({(3-cyclopentyl-propionylamino)-[2-(4-methoxy-phenyl)-ethylcarbamoyl]-methyl}-amino)-phenoxy]-butyric acid;

4-[4-({[2-(3-chloro-phenyl)-acetylamino]-[2-(4-methoxy-phenyl)-ethylcarbamoyl]-methyl}-amino)-phenoxy]-butyric acid;

5 4-(4-{{[2-(4-methoxy-phenyl)-ethylcarbamoyl]-[3-phenyl-acryloylamino]-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{[2-(4-methoxy-phenyl)-ethylcarbamoyl]-[3-pyridin-3-yl-propionylamino]-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{[2-(4-methoxy-phenyl)-ethylcarbamoyl]-[2-methylsulfanyl-acetylamino]-methyl]-amino}-phenoxy)-butyric acid;

10 4-[4-({(3-hydroxy-butyrylamino)-[2-(4-methoxy-phenyl)-ethylcarbamoyl]-methyl}-amino)-phenoxy]-butyric acid;

4-[4-({(3-carbamoyl-propionylamino)-[2-(4-methoxy-phenyl)-ethylcarbamoyl]-methyl}-amino)-phenoxy]-butyric acid;

15 4-[4-({(4-dimethylamino-butyrylamino)-[2-(4-methoxy-phenyl)-ethylcarbamoyl]-methyl}-amino)-phenoxy]-butyric acid;

4-(4-{{acetylamino-(2-pyridin-2-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(3-cyclopentyl-propionylamino)-(2-pyridin-2-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

20 4-(4-{{[2-(3-chloro-phenyl)-acetylamino]-[2-pyridin-2-yl-ethylcarbamoyl]-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(3-phenyl-acryloylamino)-(2-pyridin-2-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(2-pyridin-2-yl-ethylcarbamoyl)-(3-pyridin-3-yl-propionylamino)-methyl]-amino}-phenoxy)-butyric acid;

25 4-(4-{{(2-methylsulfanyl-acetylamino)-(2-pyridin-2-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(3-hydroxy-butyrylamino)-(2-pyridin-2-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(3-carbamoyl-propionylamino)-(2-pyridin-2-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

30 4-(4-{{(3-carbamoyl-propionylamino)-(2-pyridin-2-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(4-dimethylamino-butyryl amino)-(2-pyridin-2-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(acetyl amino-(2-methoxy-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(3-cyclopentyl-propionyl amino)-(2-methoxy-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

5 4-(4-{{[2-(3-chloro-phenyl)-acetyl amino]-(2-methoxy-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(2-methoxy-ethylcarbamoyl)-(3-phenyl-acryloyl amino)-methyl]-amino}-phenoxy)-butyric acid;

10 4-(4-{{(2-methoxy-ethylcarbamoyl)-(3-pyridin-3-yl-propionyl amino)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(2-methoxy-ethylcarbamoyl)-(2-methylsulfanyl-acetyl amino)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(3-hydroxy-butyryl amino)-(2-methoxy-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

15 4-(3-{{(3-carbamoyl-propionyl amino)-(2-methoxy-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(4-dimethylamino-butyryl amino)-(2-methoxy-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

20 4-(4-{{(acetyl amino-(2-hydroxy-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(3-cyclopentyl-propionyl amino)-(2-hydroxy-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{[2-(3-chloro-phenyl)-acetyl amino]-(2-hydroxy-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

25 4-(4-{{(2-hydroxy-ethylcarbamoyl)-(3-phenyl-acryloyl amino)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(2-hydroxy-ethylcarbamoyl)-(3-pyridin-3-yl-propionyl amino)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(2-hydroxy-ethylcarbamoyl)-(2-methylsulfanyl-acetyl amino)-methyl]-amino}-phenoxy)-butyric acid;

30 4-(4-{{(2-hydroxy-ethylcarbamoyl)-(2-methylsulfanyl-acetyl amino)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(3-hydroxy-butyrylamino)-(2-hydroxy-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(3-{{(3-carbamoyl-propionylamino)-(2-hydroxy-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

5 4-(4-{{(4-dimethylamino-butyrylamino)-(2-hydroxy-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{[acetylamino-(2-acetylamino-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{[2-acetylamino-ethylcarbamoyl)-(3-cyclopentyl-propionylamino)-methyl]-amino}-phenoxy)-butyric acid;

10 4-[4-({(2-acetylamino-ethylcarbamoyl)-[2-(3-chloro-phenyl)-acetylamino]-methyl]-amino}-phenoxy]-butyric acid;

4-(4-{{(2-acetylamino-ethylcarbamoyl)-(3-phenyl-acryloylamino)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(2-acetylamino-ethylcarbamoyl)-(3-pyridin-3-yl-propionylamino)-methyl]-amino}-phenoxy)-butyric acid;

15 4-(4-{{(2-acetylamino-ethylcarbamoyl)-(2-methylsulfanyl-acetylamino)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(2-acetylamino-ethylcarbamoyl)-(3-hydroxy-butyrylamino)-methyl]-amino}-phenoxy)-butyric acid;

20 4-(3-{{(2-acetylamino-ethylcarbamoyl)-(3-carbamoyl-propionylamino)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{(2-acetylamino-ethylcarbamoyl)-(4-dimethylamino-butyrylamino)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{[acetylamino-(2-pyrrolidin-1-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

25 4-(4-{{(3-cyclopentyl-propionylamino)-(2-pyrrolidin-1-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{{[2-(3-chloro-phenyl)-acetylamino)-(2-pyrrolidin-1-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

30 4-(4-{{(3-phenyl-acryloylamino)-(2-pyrrolidin-1-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{[(3-pyridin-3-yl-propionylamino)-(2-pyrrolidin-1-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{[(2-methylsulfanyl-acetylamino)-(2-pyrrolidin-1-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

5 4-(4-{[(3-hydroxy-butyrylamino)-(2-pyrrolidin-1-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(3-{[(3-carbamoyl-propionylamino)-(2-pyrrolidin-1-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

4-(4-{[(4-dimethylamino-butyrylamino)-(2-pyrrolidin-1-yl-ethylcarbamoyl)-methyl]-amino}-phenoxy)-butyric acid;

10 salt thereof, ester thereof, or protected derivative thereof.

71. The composition of matter of claim 63, comprising about 10 to about 200 distinct building blocks.

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72. The composition of matter of claim 63, wherein the building blocks are activated for coupling to a functional group.

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73. The composition of matter of claim 63, wherein the building blocks are

coupled to a support.

74. The composition of matter of claim 63, wherein each building block is in a container.

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75. The composition of matter of claim 63, further comprising a package containing the plurality of building blocks and instructions for their use.

76. The composition of matter of claim 75, wherein the building blocks are components of a heterogeneous molecular array.

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77. The composition of matter of claim 63, comprising a mixture of building blocks.